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garden, as he throws out his slender tongue with lightning quickness, taking in the thieving insects which rob us of our delicious fruits, we love to speak a word in his defence. From our observations, we deduce the following: Toads usually seize those bees which fall to the ground; so it is the freighted honey-gatherer, which aims amiss for the alighting board, and thus falls to the ground, that is entombed in the stomach of his Toadship. So from what we have already said, we believe, despite the opinion of some of our best apiculturists, that it is the bees in hives high from the ground which suffer from his Batrachian majesty."

On the subject of breeding in-and-in, Mr. E. Gallup tells us that in "three cases he has known bees to be bred in-and-in without any cross from other stocks, until they became mere dwarfs, and entirely ceased to swarm, or be of any profit to their owner."

At the meeting of the German bee keepers at Nuremburg, Dr. Pollman exhibited a collection of bees illustrative of their natural history. "It was composed of two boxes, containing workers, queens, and drones of the different kinds of bees, such as black, Italian, Greek, Egyptian, etc., and of different parts of the bodies of bees, hermaphrodites, insects hostile to bees, scales of wax of all sizes, broods, foul broods, combs, &c."

# NATURAL HISTORY MISCELLANY.

## BOTANY.

Climbing Fern.—The beautiful Climbing Fern (*Lygodium palmatum*) exists and flourishes in its wild state within the borders of "old Essex." The writer discovered this rare and attractive plant in 1869, while exploring "Lynn Woods" in the vicinity of the famous "Penny Bridge." The locality of its haunt is within the limits of Saugus, and not far from that romantic spot known as the Pirates' Glen. Specimens have been obtained having a stalk or "vine" nearly four feet in length. As the climbing fern is one of the most rare, graceful and attractive plants found in this country, it is a matter of satisfaction to know that we have it growing in our woodland valleys. This fern has been found, though rarely, in Florida, Kentucky and Massachusetts. In Virginia it is often seen, and it has been found in several localities between that state and our own. Some very fair specimens have been obtained in Concord, not far from Thoreau's favorite Walden woods. At East Windsor Hill, Conn., at one time abundant supplies were obtained for decorative purposes, but so careless were the people who sought this dainty "vine" that the Legislature passed an act forbidding its heedless and wanton extermination. The name *Lygodium* is from the *Greek* signifying *flexile* or *flexible; palmatum* suggests the resemblance of the outlines of the fronds to an outspread hand. Success in transplanting the "Climbing Fern" depends much upon the care exercised to obtain good roots. Having these, little complaint will be made of the difficulty attending the culture of one of Nature's daintiest eccentricities.—GEO. E. EMERY.

PARASITIC FUNGI IN THE HUMAN EAR.—In the "Bulletin de la Société Imperialé des Naturalistes de Moscou" for 1870, No. 1, just received, is a paper by Dr. Karsten on the parasitic fungi found in the human ear, accompanied with beautiful illustrations. The author confirms the statements of Hallier and other previous observers, that when the spores of these parasitic fungi are sown elsewhere, the plants which result from them assume very different forms, according as the substance on which they are sown is rich or poor in material for nutrition; and that fungi described as distinct species, or even as belonging to different genera, are merely different genetic forms of the same plant.—A. W. B.

RED SNOW IN WASHINGTON TERRITORY.—In the summer of 1858, when employed on the survey of the boundary between the Territories of the United States and those of Great Britain (the 49th parallel of north latitude), I ascended the main range of the Cascade Mountains, a little south of the line and at an elevation of about 6500 feet. While looking for a camping place, one of my men, with an expression of horror, brought me a handful of *red snow* which he had picked up on a higher neighboring point, and asked what it was. His disgust can be imagined when after inquiring where he had obtained it, I eat it. Accompanying him back I found that the color was, so to speak, "sheeted" over a considerable space on the northern side of a point of rocks. As it lay in place, it was of a pink color, beautifully contrasting with the white bank on which it lay. Compressing it in the hand, it gave a bloody tint to the water which oozed from it. The taste seemed somewhat earthy. I had no other means of examining it than a pocket lens, under which the coloring matter seemed to consist of tadpole shaped bodies, with rounded heads and attenuated tails, perhaps two lines in length. I afterwards met with the same phenomenon on the range dividing two branches of the head waters of the Similkameen mountains, a little east of the Cascades, and at the height of about 6000 feet. The coloration of the snow was unequal — somewhat in bands or clouds, or, as I have above expressed it, "sheeted," and it rarely penetrated above a few inches. I believe this is the first notice of the occurrence of the "red snow" within the territories of the United States. — GEORGE GIBBS.

FERTILIZATION OF FUMARIACEÆ. — Professor Hildebrand of Bonn contributes to Pringsheim's "Jahrbuch für wissenschaftliche Botanik" for 1870, a continuation of his observations on the mode of fertilization of different races of plants, referring especially to the order Fumariaceæ. He finds that in all plants belonging to this order the access of pollen to the stigma of the same flower is unavoidable, with the exception of Hypecoum, in which the stamens are distinct. In the genera with diadelphous stamens (Fumaria, Corydalis, Dicentra, etc.), the pollen falls immediately on to the stigma, which is in close proximity to the anthers, and is developed precisely at the same time. This does not, however, necessarily imply self-fertilization, as insects carry off the pollen to other flowers to fertilize them. By artificial impregnation Prof. Hildebrand obtained similar results to those published by Darwin in the case of other plants, that a pistil fertilized by pollen from its own stamens does not produce so many seeds as one fertilized by foreign pollen. Hypecoum is somewhat protandrous (stamens ripening before pistil). — A. W. B.

FERTILIZATION OF DICHOGAMOUS FLOWERS. — While Professor Hildebrand has been prosecuting his researches in Germany, Professor Delpino of Florence (now Botanical Professor in the Forest Institute at Vallombrosa) has been following up similar lines of inquiry in Italy, with equal success. In his recent papers, entitled *Ulteriori Osservazioni sulla Dicogamia vel Regno Vegetale* — of which the first part fills almost two hundred and fifty octavo pages, and the first fasciculus of the second part, forty pages more — he has illustrated the very diversified arrangements in many natural orders with hermaphrodite blossoms, which secure cross-fertilization as effectively as if the flowers were of distinct sexes. This treatise is a treasury of observation upon this subject. We have also from the same author an Italian version of a lecture by Dr. E. Müller, on the application of the Darwinian theory to flowers and to the insects visiting the flowers, with extended notes — the whole of which is worthy of an English version. — Eds.

Lichens. — Since the article entitled "Lichens under the Microscope" was written, I have met with a notice in Krempelhuber (Geschichte der Lichenologie, vol. i, p. 431) of three fossil lichens, one related to Ramalina, a second to Verrucaria, and a third to Opegrapha; the first two found in the "Keuper," or upper new Red Sandstone, and the third in chalk.

In regard to the number of the species, it ought perhaps to have been stated that Krempelhuber's enumeration includes all synonymes and doubtful species, in short everything to which a separate name has been attached. Nylander (Synopsis, 1859) gives the number of species at 1361, which is probably considerably below the real number. — H. W.

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## ZOOLOGY.

Notes on American Deer. — I wish to make an early correction through the Naturalist of an error in my observations as given in my paper entitled "American Cervus." On page 7 of that paper, I stated that the elk (*C. Canadensis*), like most other quadrupeds, has but one pelage a year. I can now state that it sheds its coat twice a year like all the other species of that genus, which I have had an opportunity of studying.

The shades of color, and the length of the hairs, of the summer coat and its successor, are so nearly alike, and the former is shed and replaced by the latter so gradually, that it is exceedingly difficult to detect the change even when the attention is called directly to it.

In anticipation of some more extended observations on this branch of natural history, allow me to notice a very marked physiological difference between the elk and the three smaller species of the same genus which I now have in my grounds (*C. Virginianus*, *C. macrotis* and *C. Columbianus* Rich). In the elk the